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ABSTRACT

This paper analyzes prevalent methods of comparing schools' performance and recommends alternative measures more helpful toward understanding how schools might be improved. The influence of two factors--resource availability and financial need--on the level of school programming is explained in light of Michigan's system of educational finance. Because of varying professional salaries and special costs for categorical programming, per pupil expenditure is judged an ineffective measure of quality. Instead, assessing services by identifying the number of professionals per 1,000 students is advocated, a method accounting for such quality indicators as lower teacher-pupil ratios and use of special staff. A discussion of measuring quality in education in terms of student achievement draws on effective schools research. Following Ronald Edmonds and Lawrence Lezotte, this paper argues for the fairness of determining the effectiveness of schools not on the basis of aggregate scores, but through test data broken down by social class. An effective school is thus defined as one in which the percentage of students from the lowest socioeconomic class in attendance who attain mastery of the basic skills taught at each grade is the same as the percentage of students from the highest socioeconomic class attending. (MJL)

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RESOURCE FACTORS IN EDUCATION AND QUALITY MEASURES

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Schools and school districts are unavoidably compared. They are compared by how much is spent per student, levels of millage effort and the achievement scores of students. Most such measures are simplistic and don't reflect all the variables that influence school costs and school achievement. A community does want to know how their schools are doing, whether costs are prudent in terms of program, whether students are achieving. This paper will attempt to express and illustrate the complex interaction of factors and suggest alternate methods of comparing schools and school districts.

It is first necessary to understand the financing of education in Michigan and how financial and need factors influence the level of school programming. The ability to support a quality educational program depends on the dollars available per student and the cost of the professional input units (salary costs of professional personnel).

I. DOLLAR AVAILABILITY

Dollars available for education depend upon the tax rate levied and the tax base against which it is levied.

Dollars Per Student = TAX RATE x STATE EQUALIZED VALUATION PER STUDENT (SEV/STD)

Example: $ 1,800.00 = .030 (30 mills) x $ 60,000.00 SEV/STD

∴ Dollars available vary by tax rate and SEV/STD

A. THE FIRST VARIABLE - PROPERTY TAX VALUATION PER STUDENT (SEV/STD)

State Aid to K-12 Education

The state through an aid formula attempts to equalize the variable SEV/STD by guaranteeing a minimum SEV/STD per mill levied. The formula determines a gross allowance per student and the state pays the difference between the gross allowance and the dollars generated by the local school operating levy. The gross allowance is computed by first allocating a fixed amount to each student in membership ($328. in '82/83) and then guaranteeing a dollar return per student for each mill levied ($54. per mill in '82/83). In this way all districts, within the formula, and levying the same operating millage have the same dollars available per student - the differences in SEV/STD are equalized. However, the gross allowance is primarily determined by the local millage rate. The following table illustrates how the formula works.

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SCHOOL STATE AID DISTRIBUTION TABLE

	DIST. A (20 MILL LEVY)			DIST. B (30 MILL LEVY)			DIST. C. (40 MILL LEVY)		
GROSS ALLOWANCE	$1408.	$1408.	$1408.	$1948.	$1948.	$1948.	$2488.	$2488.	$2488.
LOCAL TAXES PER STUDENT									
@ 40,000 SEV/STD	800.			1200.			1600.		
@ 50,000 SEV/STD		1000.			1500.			2000.	
@ 60,000 SEV/STD	____	____	1200.	____	____	1800.	____	____	2400.
STATE AID PER STUDENT	$ 608.00	$ 408.00	$ 208.00	$ 748.00	$ 448.00	$ 148.00	$ 888.00	$ 488.00	$ 88.00
STATE AID PER MILL LEVIED	$ 30.40	$ 20.40	$ 10.40	$ 24.93	$ 14.93	$ 4.93	$ 22.20	$ 12.20	$ 2.20

NOTE:

A. The higher the millage the higher the gross allowance

B. The higher the local SEV/STD the lower the state aid

C. The lower the local millage effort the greater the state aid per mill levied

D. At below average SEV/STD the higher the millage the greater the state aid per student

E. At above average SEV/STD the higher the millage the smaller the state aid per student

F. The state aid formula favors the low effort-low valuation districts

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The table shows that the Michigan state aid plan favors the low effort and low valuation districts. The higher the valuation and the higher the effort the less state participation in the costs of education.

OUT OF FORMULA DISTRICTS

About one-third of Michigan school districts are Out-of-Formula, meaning that their SEV/STD is greater than the state guarantee and therefore they receive no state aid. The dollars received by these districts depends upon the millage rate levied against their tax base, a high SEV/STD and a high millage rate results in a high level of resources. In 1972-73, 95% of all school districts were in formula, but because the formula SEV/STD has not kept up with the actual growth in SEV/STD about 34% of the school districts are out of formula today.

STATE RESOURCES

Over the past five years in particular the state contribution to meeting the cost of public education has decreased. The state contribution has dwindled from approximately 45% to less than 30%, thus increasing the burden on the local taxpayer. This has generally been accomplished by increasing the aid formula less than the increase in state average SEV/STD and less than the inflationary increase in the cost of education. The state was the principal winner in increased property valuations, and local school districts either moved out of formula or had to seek an increase in property taxes. No one would deny the financial difficulties the state has encountered with the mounting social needs and decreasing resources. But the competition for state dollars will not diminish as new resources are gained through the increase in the state income tax. Education will only be reestablished as a state top priority through a broad, statewide demand.

B. THE SECOND VARIABLE - TAX RATE

We have seen that the local school operating tax rate is the primary determinant of the state aid gross allowance. The school tax rate is a local community decision - there is no required minimum to guarantee a level of educational services. Neither does the formula equalize millage rates as it does SEV/STD but it does give differential weight to each mill levied. In reference to the state aid table, if the gross allowance for each district is divided by the millage levied an average return per mill levied is computed:

	GROSS ALLOWANCE	MILLAGE	DOLLARS PER MILL
DISTRICT A	$ 1,408.00	20 mills	$ 70.40
DISTRICT B	1,948.00	30 mills	64.60
DISTRICT C	2,488.00	40 mills	62.40

The formula gives less dollar value to each additional mill levied. Nonetheless, the community determines the school tax rate and thus the dollars available to support the educational program. The community electorate can withhold educational services from its children if it wishes.

Tax Rate Equalization Through the Circuit Breaker:

The Michigan property tax rebate system (Circuit Breaker) is the most progressive in the country. Simply, it provides that 60% of the property tax (residence only) that exceeds 3.5% of gross income is rebated as a credit on the state income tax. The greater the property tax in relation to income the greater the rebate. Most individual property tax payers qualify for the circuit breaker. If one files a long form federal income tax, local property tax is a deductable item. A great many perople are able to take both state circuit breaker and federal tax credit for local school property taxes. The only way to receive state and federal general fund monies to support local public education is through the property tax. State and federal support is gained in three ways:

1. Through the state aid formula the state participates in all mills levied (in-formula districts).
2. The circuit breaker refunds up to 60% of the marginal (extra) tax levy.
3. The federal government permits the deduction of property taxes on the federal income tax form.

In a real sense then the local tax effort is equalized but this occurs outside of the state aid formula. Schools receive the state aid and tax payers the rebates only on the taxes levied.

C. THE THIRD VARIABLE - STUDENT NEEDS

It has been generally accepted that students with greater need should receive more resources to compensate for their deprivation. The clear example of this is in special education. Mandatory special education laws and the rules that implement them provide for unique standards for each type of disability. These include much lower student-teacher ratios (7:1 and 15:1) and require all the supplemental services deemed necessary to

help these children reach their full potential. The cost of educating a physically handicapped student is several times more than that of educating a general education student. Schools have no choice; they must comply with regulatory and legal standards. Both the federal government and the state have appropriated funds to meet the legislated standards, but these appropriations have not kept up with the cost of the mandated level of services.

State and federal compensatory programs provide categorical funds to meet the unique needs of environmentally deprived children - children of the poor. These categorical funds increase the quality of the program through lower professional/student ratios and by providing other support services. Most participants in the compensatory programs are minority children which comprise a substantial part of the Middle Cities districts' enrollment. State funds for this purpose have been relatively constant over recent years and federal monies have decreased. Monetary inflation has resulted in an erosion of services. But there are also a substantial number of white, black and brown children who are outside the poverty level who need special help.

Categorical funds for special education and compensatory education can only be used to serve individually qualified children. There is no provision in the general school aid formula for achieving equity in terms of the educational needs of general students. Differential programs to meet the differential needs of regular students must be programmed in the regular budget of the district - this is the measure of quality.

D. THE FOURTH VARIABLE - INPUT COST OF EDUCATION

Several studies have documented that input costs, primarily salaries, vary across school districts. Labor markets exist for school personnel as they do for business. The automobile industry has been the driving force for salaries in Michigan, and geographically the tri-county area of greater Detroit is the highest labor cost area. Salary levels generally decrease outstate.

This is also true of teachers and other school personnel. The tri-county area districts pay higher salaries, followed by outstate industrial centers (Middle Cities), then followed by suburban and rural districts. Salaries vary according to urbanization and district size. For negotiating purposes each district and each local union attempts to establish a market

of comparables. What comparable districts pay drives the negotiating process. Other factors, such as availability of money and bargaining strength, of course, make a difference. Market salary demands also drive the millage rate as districts strive to maintain programs in the face of higher salary costs. As a result millage levels are higher in the metropolitan tri-county area and Middle Cities districts. It should be recalled from earlier discussion that the state aid formula favors low effort districts. In competitive salary markets the inability of a district to levy an adequate millage results in lower program quality because it is usually the program rather than wage levels that adjust costs to resources.

There are also cost and quality differences within local geographic areas. A study of quality-cost relationships for elementary schools in Ingham County was done by Dr. Michael Boulus in 1979-80. He classified districts as Urban, Suburban or Rural, counted the total professional personnel input units per elementary building, and computed the ratio of personnel input units to students as a quality measure. He then compared this measure to cost variables and resource variables. A table drawn from his data is shown below.

	Quality - Students per Input Unit	Average Teachers Salary	Cost per Input Unit	Operating Millage	SEV per Pupil	Average per Capita Income
URBAN	19.60	$ 18,633	$ 14,756	32.68	$ 28,777	$ 2,958
SUBURBAN	16.32	17,875	13,544	33.52	38,022	3,620
RURAL	17.88	16,069	13,234	28.38	26,394	2,757

The table shows that suburban districts with moderate costs, high millage effort and higher per capita income had the highest quality program. Rural districts with lower costs and lower millage efforts maintained an average quality program. But the urban district, in this case Lansing, with higher costs and high millage effort had the lowest quality as measured by the number of students per each personnel input unit.

Higher input salary costs mean higher costs per student. Therefore, higher cost per student may or may not reflect better educational programming. In urban districts, which have a higher incidence of handicapped students, the average cost per student is further escalated by the inclusion of categorical program costs (special education, Title I, etc.) in computing average costs. Categorical costs only apply to individually qualified students and when averaged over all students raise the average cost per

student presenting a distorted cost statistic. Dollar cost per student just does not adequately measure program quality when applied to all districts across the state. A more realistic measure is the services provided children as indicated by the number of professionals per 1000 students. There is no provision in the state aid formula for equalizing differences in salary or other input costs even though the control of these cost differences is substantially outside the control of the school board.

II. QUALITY IN EDUCATION

Quality in education is generally evaluated in terms of dollars expenditures per student or in terms of the academic achievement of students.

To the researcher seeking equity among school districts comparison is generally made on the basis of dollars spent per student. It is assumed that the more dollars spent the better the program. In a macro sense this is probably true but we also know that the input costs (salaries) of education vary and that, at least in Michigan, we know that our statistical regular student per capita cost data is contaminated by the inclusion of categorical cost data. If the input costs of education were the same across all districts the dollars spent per student would be a good measure of program offering. However, to the extent that the statistic, dollars per student, is applied across districts with dissimilar salary costs (input costs) it is a poor measure of comparative programming. Dollars, of course, are an easily obtained statistical data base and are used as a surrogate indicator of educational programming. Educational services are essentially personnel services.

Program quality comparisons among school districts could simply be measured by the number of professionals per 1000 students. This measure reflects lower classroom teacher-pupil ratios, it reflects the use of special teachers in music, art and physical education; it reflects a broader high school curriculum offering advanced classes for small numbers of students; and it reflects other specialists such as librarians, counselors, special subject consultants and administrators. It, of course, does not measure the capacities of the individual professionals - it is a program quality measure. School people, parents, the public and the press compare and rate schools and school districts by the test score achievement of its students - average test scores of the total student body. School average test scores still correlate most directly with the socio-economic status. Although the goal of public education is to make this correlate less

significant, it is still the most pervasive. Comparison across schools by achievement test scores becomes substantially a social class comparison.

The "better" school systems are generally conceived to be the upper economic suburban districts. These are generally excellent school systems combining students who bring a high level of achievement orientation, parents who have high educational expectancies for their children and the schools, taxpayers who recognize the importance of and the willingness and capacity to pay for excellent schools. But urban districts also combine these factors and have fine programs serving student needs; their programs, however, serve the diverse needs of a heterogenous population. District-wide aggregate test data is a comparative value we will always want to use but should we also have a measure that reflects how well a teacher, a school or a school district does with the children it serves? For the urban district, should we be more concerned with the progress made each year in offsetting social class as an indicator of academic achievement?

The Educational Environment

The social milieu in support of education has changed in the last two generations. There are more divorces, mixed families, single parent families, working mothers, sibling baby sitters, neglected children, unwed mothers. Generally the family as a cohesive unit has changed. Family influence has diminished and peer and media influence has increased. The changing social mores effect all of society but are more concentrated among the poor and are more prevalent in the cities where the greatest number of poor live.

Not only has the social milieu changed but the governance of education has changed. The administration prerogatives of the schools have changed. Public schooling has been established as an individual constitutional right and a series of civil rights cases have established parent and student rights and due process requirements. These changes have been paralleled with the affirmation of job rights as a constitutional property right and due process is required in employee relations. Union contracts have further eroded the prerogatives of administration. Boards of Education have become more politicized and their members oriented toward special issues, resulting in a less cohesive public image.

Another important factor has been the great migration from southern rural areas ot the northern and western urban areas of the country since the Second World War. Our cities have always been the place of entry for the immigrant, the refuge that promised jobs for adults and opportunities for children. Cities are increasingly the haven of the poor, and the burden is increasingly on the schools

to provide the avenue for upward mobility in an open society. But now we find that the post war industrial revolution that spurred this great internal migration has deteriorated and has been replaced by an electronics and communications revolution, principally located in the West and the South. Jobs of the future will increasingly be related to brain power rather than muscle power. Michigan, in particular, has and will experience a permanent job shortage as the sutomobile industry moves to automation and robotics.

At a time when needs are greatest our resources are declining. Our educational institutions have been financially damaged and the road back will be difficult. But this lack of resources cannot be used as an excuse for less effort or commitment. There are emerging positive factors: youth are increasingly aware of education as a job entry requirement; they are more serious, less rebellious; discipline is improving; test scores are increasing; parents too are becoming more supportive of education and the schools; teachers and school administration are working more closely together; there is a new hope for educational success in working with the children of the poor.

EDUCATIONAL PHILOSOPHY

Education begins with a philosophy and belief--a philosophy that <u>all</u> children are important and worthy of a full investment of resources in relation to their needs--a belief that <u>all</u> children can learn and that educators can manage the school environment for learning. This philosophy and belief has always been the basic tenet and hope for American education. Our capacity to implement this tenet has been the challenge and the criticism of education over the past two decades.

We know that the first five years of a child's life are the most formative, and some psychologists suggest that the basic aptitudes and gratifications for learning are established during these years. These, of course, are home years, not school years. And when a child is old enough to be in school, we know the school is not his/her whole environment - many external forces continue as an important part of the dynamics of learning. But the primary responsibility of our schools is the education of all children - it is the reason for the existence of public schools. This mission should be clear regardless of the differences in environment from which children come to school, and regardless of differences in the rate of learning ability. Urban schools accept this responsibility. To fail in this is to threaten the existence of our democracy.

Ronald Edmonds and Lawrence Lezotte, professors of education at Michigan State University, have been leaders in research to identify the characteristics that contribute to effective schools. The procedure has been to search out and identify successful urban schools in terms of student achievement.

In general, achievement test results are made public by building and/or district summary results (an average of all the individual scores). The public tends to evaluate a district, or a particular building based on this summary data. According to Professors Edmonds and Lezotte, those schools that fit their definition of "effective" were not determined based on this summary of overall, achievement test results for each building. Instead, it is necessary to go beyond simple building level test results and "disaggregate" or break down the building's test data by social class. Those schools labeled "effective" were ones in which the lowest socio-economic class in attendance attained mastery of the basic skills taught at each grade level in the same proportions as those students from the highest socio-economic class attending the school. For example, if in a particular building, 80% of the highest socio-economic students attained mastery of basic skills (say on the Michigan Educational Assessment Program test), one would expect 80% of the students of the lowest socio-economic class enrolled in that building to attain also minimum skill mastery.

Such an evaluation of instructional effectiveness has many implications. When test results are analyzed in this manner, it can be determined to what degree the basic skills' instructional program is working for all students in a given building. In an article prepared for the National Institute of Education, Professor Edmonds states:

> To be effective a school need not bring all students to identical levels of mastery, but it must bring an equal percentage of its highest and lowest social classes to minimum mastery. This measure of school effectiveness serves two broad purposes. First, it permits the middle class to establish the standard of proportionate mastery against which to judge a school's effectiveness. Second, it permits schools to be easily characterized as improving or declining as the proportion of the lowest social class demonstrating mastery rises or falls.[1]

The fourth grade teacher in an urban school district who achieves a 1.0 year average growth in achievement for her class of fifty percent lower socio-economic class children may be doing a better job of teaching all of her students than her counterpart who achieves a 1.2 year growth in her class of 100 percent middle and upper social class children. This same statement could be made for the

comparison of an elementary school in the central city with an elementary school in a suburban district. In a large urban high school with a heterogeneous student population there is no measure of how well academically the higher social class does in relation to a similar population in a less heterogeneous suburban or rural school.

Schools which met the criteria for effectiveness described by Professor Edmonds have been found in many urban centers as well as in middle class suburban districts. There were also schools found to be not effective, based on these criteria, in affluent districts as well as in lower socio-economic areas. Thus, their researchers were able to determine that certain schools demonstrated they can make a difference, can be shown to be effective regardless of whether they serve lower, middle or high socio-economic class students. After locating such schools, the next step was to identify characteristics of those schools judged to be effective. Professor Edmonds, in the NIE article cited earlier, states:

> The characteristics of an effective school are (1) the principal's leadership and attention to the quality of instruction; (2) a pervasive and broadly understood instructional focus; (3) an orderly, safe climate conducive to teaching and learning; (4) teacher behaviors that convey the expectation that all students are expected to obtain at least minimum mastery; and (5) the use of measures of pupil achievement as the basis for program evaluation.[2]

It is apparent that these characteristics of effective schools relate primarily to the management of schools and places significance on the leadership of the principal. The purpose of management is to achieve organizational objectives through people; this is especially true of educational organizations. The principal must manage the internal environment of the school to insure that the total school environment is geared to student learning. This means creating a level of control and discipline, a climate and expectancy for learning and a professional group climate that supports its members in the cohesive pursuit of educational objectives. The principal also needs support, direction and leadership from the central office. The ultimate evaluation is how well a teacher serves his/her children. The teacher is a professional but his/her potential is best realized in a goal-oriented, supportive work environment.

Middle Cities Education Association sponsored six days of workshops last year, directed by Professors Edmonds and Lezotte, on planning for and developing more

effective schools. Nineteen of the Middle Cities districts sent teams to participate in these workshops. All Middle Cities districts have been working diligently at improving student achievement, not just overall, but for all socio-economic groups of children. MEAP test scores in Middle Cities districts are improving and the emphasis is on continued, sustained improvement.

We recognize that there will always be children with different capacities to learn and differing social and home support environments. But the challenge to urban schools is to build on the external support systems while creating an internal school response to the unique needs of children. Public schools will continue to accept responsibility for educating all children.

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